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ABSTRACT

Background: The NECaSP intervention aspires to increase sport and physical activity (PA) participation amongst young people in the UK. The aims of this paper are to report on a summative process evaluation of the NECaSP and make recommendations for future interventions. **Methods**: Seventeen schools provided data by students aged 11-13 (n=1,226), parents (n=192) and teachers (n= 14) via direct observation and questionnaires. Means, standard deviations and percentages were calculated for socio-demographic data. Qualitative data was analysed via directed content analysis and main themes identified. **Results**: Findings indicate further administrative, educational and financial support will help facilitate the success of the programme in improving PA outcomes for young people, and of other similar intervention programmes globally. Data highlighted the need to engage parents to increase likelihood of intervention success. **Conclusions**: One main strength of this study is the mixed-methods nature of the process evaluation. Changes in the school curriculum can be successful once all parties are involved (community, school, families). Finally it is recommended that future school based interventions that bridge sports clubs and formal curriculum provision, should consider a more broad approach to the delivery of programmes throughout the academic year, school week and school day.

INTRODUCTION

Research overwhelmingly indicates that regular physical activity (PA) can lead to reduction of overweight and obesity, and reduce the risk for type 2 diabetes, and mental health problems such as depression and anxiety among young people[1]. Additionally, sedentary time (ST), defined as time spent in sedentary behaviours such as sitting or laying, is also now considered to be an important independent contributor to overweight and obesity[2]. Current guidelines for PA in childhood are to accumulate 60 minutes per day of moderate to vigorous intensity PA[3]. There are no specific guidelines for healthy levels of ST among children and adolescents, though it is generally recommended that long periods of ST be broken up throughout the day[3]. It is also now recognised that one can be physically active, but still be highly sedentary, therefore still incurring risks associated with sedentariness (CITE).

Worldwide it is reported that the majority of young people are not engaging in he recommended levels of PA. Hallal et al. (2012) report that 80.3% of adolescents 13-15 do not achieve 60 minutes of moderate to vigorous intensity PA per day (CITE). In the UK, the Health Survey for England reported that 14% of boys and 8% of girls aged 13-15 met PA recommendations[4]. Additionally, 16% of boys and 25% of girls aged 5-15 in London were categorised as having a low level of PA[4]. The School Sport Survey (2008-2009), a survey of students aged 5-16 years old that evaluates time spent in physical education (PE) and out of school sport each week, reported that in Newham Borough of East London only 36% met the target of 3 or more hours of PA per week compared to 46% in London and 50% nationally[5]. Additionally, evidence suggests that young people's PA drops off dramatically from age 11, highlighting the need for interventions targeting this age group[6].

In response to low levels of PA among young people in East London a focus on increasing PA and sport among children and young people was declared a major goal of the

legacy of the London 2012 Olympics and Paralympics[7]. Revised physical education (PE) curriculum and PA interventions in schools and in the community have since been funded and implemented following the London 2012 Olympic Games. These initiatives have focused on enabling students to be more physically active for sustained periods of time, developing competence and confidence in a range of PA, and providing opportunities to engage in sports[8]. One such intervention is Newham's Every Child a Sports Person (NECaSP) programme. This intervention uses a multi-component approach (school, family and community-based intervention components) to engage Year 7 (11-13 year old) young people in PA and sport while reducing time spent being sedentary [9].

As the number of successful and unsuccessful interventions targeting young people's PA and ST has risen, it has become increasingly important to understand why a program was or was not successful at eliciting these behaviour changes alongside the outcomes or impacts of an intervention[10]. A recent systematic review examined school-based and multi-component PA interventions and found the overall impact of intervention was small (Russ). The authors suggest that school-based and multi-component PA interventions are more likely to be successful with 5 essential components: quality PE, PA during school, PA before or after school, staff wellness and family/community engagement (Russ). Limited research on the implementation of school and multi-component PA interventions indicates the need to better understand how these 5 components can be combined to produce the most effective results (Naylor).

Process evaluation provides a comprehensive view of program implementation and explores how that could impact the outcomes of an intervention[10]. A summative process evaluation examines intervention data at follow-up and evaluates whether it was implemented as planned and provides recommendations or future intervention[11]. The aim of this paper is to report on a mixed-methods summative process evaluation (including quality, quantity and

fidelity) of the NECaSP programme. Secondary aims include identification of barriers and facilitators to the delivery of the intervention and to contribute to the development of future intervention programmes aiming at increasing PA and reducing ST among diverse adolescents.

METHODS

Intervention Background

The NECaSP programme is a case series intervention targeting all Year 7 students from 17 secondary schools in the Newham borough of East London. In this case series intervention observations were made on participants receiving the same intervention without a control group (http://childhoodcancer.cochrane.org/non-randomised-controlled-study-nrs-designs). Data for this study can be found published elsewhere[12]. The intervention included 3 phases: 1) an introductory day in schools for students to sample a range of sport and PA with coaches from local sports clubs (4 hours in length), 2) a session at the host institution sports centre where students were coached on 5 sports (5 hours in length), and 3) alteration of PE curriculum with the opportunity for students to engage in a 6-week after school programme (1 hour in length x 1 day per week) on a sport of their choosing delivered by coaches from local sports clubs[12]. The primary outcome of the intervention was to increase participation in PA and sport among Year 7 students. Secondary outcomes included reducing ST and joining local sports clubs in the community. Briefly outcome data showed: sample size at baseline was n=557 and n=356 at follow-up. No increase in students meeting PA recommendations was found at follow-up but PA on weekends was significantly higher at weekends at follow-up ($p<.05$) and participation in 5 sports (badminton, basketball, volleyball, cricket and rowing) was higher at follow-up ($p<.05$). Over 66% of participants at follow-up indicated that they would maintain participation in a sports club as a result of the NECaSP intervention[12].

Process Evaluation Methods

As the importance of process evaluations is becoming more prevalent, researchers are increasingly reporting on the implementation of their interventions, though there is no consensus on what elements should be included[13]. Therefore elements of commonly used frameworks have been incorporated in this process evaluation based upon the works of Griffin et al, and Saunders, et al.[10, 13]. A systematic framework was used to evaluate the intervention's delivery quantity, quality and provide and overall evaluation of the intervention by participants, parents and teachers[10, 13]. Although fidelity, whether intervention implementation adhered to the original plan, was not specifically measured via validated fidelity indices; quantity, quality and overall evaluation were used as indicators of intervention fidelity[13]. Table 1 provides a summary of all process evaluation components.

Quantity is defined as an assessment of how many students, schools, and coaches participated in the programme, and number of sessions/sports delivered. Quality was assessed by examining participation by students and schools, communication between schools, parents, teachers, programme staff and researchers, and organisational effectiveness to include how the programme was delivered. Finally, the programme was evaluated by examining the expectations, awareness of the programme and recommendations for improvements by students, parents, and teachers. Additionally, socio-demographic data (age, sex, Index of Multiple Deprivation (IMD), self-reported ethnicity) was collected. All participants provided informed consent and the Research Ethics Committee of the host institution approved this study.

Data Collection Instruments

Intervention records kept by programme administrators were used for evaluation components regarding quantity. Additionally, attendance records kept by schools were used to assess pupil participation numbers (Table 1).

Direct observation was used to assess quality of the intervention. Quality of organisation and communication was observed by the research team to provide a description of this evaluation component. Direct observation was undertaken on intervention staff, teachers, coaches and students quarterly during the intervention. A member of the research team was present at 50% of intervention activities to conduct direct observation. Data was recorded via notes by the research team member. Email communications between intervention staff, teachers, coaches and the research team members were also used as a means of data collection (Table 1).

Students from all participating schools completed a pre-intervention (baseline) questionnaire that included questions on their expectations of the NECaSP programme and a post-intervention (regardless of fully completing all stages of the intervention) (follow-up within 1 week of completion) questionnaire on their perceived gains from the programme. Parents of participating Year 7 students completed a questionnaire on their awareness of the programme, perception of the effectiveness of the programme, and improvements to future implementation. PE teachers from participating schools were asked to complete a questionnaire giving their opinions on the quality of service from the intervention staff, effectiveness of the programme, and improvements for future implementation (Table 1).

ANALYSIS

Means, standard deviations and percentages were calculated for socio-demographic data. Counts and percentages were computed for quantity and quality variables. For quality variables data was analysed via directed content analysis and main themes identified[14]. T-tests and ANOVAs were conducted to determine significant differences between baseline and follow-up data. McNemar Chi-square tests were used to determine if there were any significant differences between baseline and follow-up responses to expectations and perceived gains questions. Parent and teacher questionnaires were analysed via directed

content analysis[15] and main themes identified. All statistical analyses were conducted in PASW v21 (Quarry Bay, Hong Kong).

RESULTS

Quantity

Participating Schools and Students

Sixteen of 17 eligible secondary schools from Newham, London agreed to take part totally n=1,226 students. Three participated schools in Phase 1, 5 participated in Phases 1 and 2, and 6 completed all three phases of the programme. Four schools kept records of attendance for participation in the programme. Three schools (referred to schools A, B and C) have complete attendance data for Phases 1-3. School C had the highest percentage of students completing all phases of the programme (79.8%).

Of the six school completing Phases 1-3, Three (37.5%) (schools A,B and C) completed baseline and follow-up questionnaires. Table 2 summarises socio-demographic data for students of these three schools. The baseline sample was n=557 students and n=356 at follow-up, with an overall response rate of 63.9%. Mean age of students at baseline was 11.44±.50 and 11.44±.53 at follow-up. Sex at baseline and follow-up was 52.8% and 56.2% male and 43.3% and 47.2% female. Sixteen ethnicities were self-identified with Asian Bangladeshi (22.8%, 26.1%), Black African (15.6%, 13.2%) and White Other (12.2%, 10.4%) most commonly reported. The majority of the sample were in the most deprived IMD group (83.7%, 85.1%) (Data.gov.uk, 2015). T-tests and ANOVAs revealed no significant differences in the baseline and follow-up samples for socio-demographic variables.

Number of Sessions Delivered

Intervention records indicate that for schools who participated, the desired number of sessions in each phase was reached. In Phase 1, an average of 5 sports sessions were delivered in each of the 16 participating schools (goal was 4-6). In Phase 2, 5 sports sessions

were delivered to each of the 13 participating schools (goal was 5). In Phase 3, 1 sports session was delivered over a 6-week period in 8 participating schools (goal was 1 session). Although eight schools participated in Phase 3, only six schools completed all 3 phases.

Sports and Coaches

The NEaSP programme offered 20 sports for schools and students to choose from. Records indicate that students themselves selected all 20 sports delivered in schools. The most common sports chosen were: archery (n=6), BMX (n=5), fencing (n=4), taekwondo (n=3), capoeira (n=3), boxing (n=3), futsal (n=2), and basketball (n=2). Coaches from local sports clubs in East London were invited to conduct coaching sessions. Sixty sports clubs were included in the programme. Twenty-five coaches from these clubs participated in sessions throughout the programme.

Quality

Were students able to participate?

Records and email correspondence from schools and NECaSP administrators were analysed for data on non-participation by schools. Data indicate that the key barriers to participation by schools were: 1) inability to fit the programme into their regular curriculum and 2) inability to afford the costs and staffing associated with traveling from school to the host institution facilities. Schools frequently referenced their demanding schedules and the need to meet deadlines that had priority above delivery and participation in the NECaSP programme. While they indicated a strong interest in engaging with the programme, they were unable to facilitate the programme within these constraints. Furthermore, while the majority of costs associated with participation in the programme were covered by the programme, costs of travel for Phase 2 was designated as the responsibility of schools. Non-participant schools indicated they could not accommodate this extra cost. One teacher from School B reported:

'Buses to get to UEL are really expensive so we might not be able to bring everyone.'

Additionally, many schools indicated difficulties with having enough staff to accompany students to the venue, or enough staff remaining at the school while others travelled with students to the venue.

Analyses indicate that in participating schools there were few barriers to students' participation in the NECaSP programme. Students were able to vote on the sport they preferred in the 6-week after school curriculum. The main barrier to participation was identified for Phase 3. Schools and NECaSP administrators indicated the main barrier was lack of spaces in the 6-week after school programme to accommodate all students who wanted to participate. As a result of limited space, teachers explained that they had to choose which students to refer into the programme. Criteria for selection included, showing an interest in the specific sport that the programme would focus on, currently active, and showing good behaviour.

Was communication effective?

Analyses of direct observation and email communications of programme administrators, schools, programme staff, and research team indicate that overall, the communication among and between all parties needed improvement. Data indicate that expectations for schools, teachers, students and parents may not have been sufficiently expressed to each party. Many schools seemed unaware of the programme's aims and objectives and were therefore unable or unwilling to engage in some phases of the programme. This limited the ability of students to participate in some or all components of the programme.

A secondary outcome of the NECaSP programme was to encourage students to join local sports clubs. Analyses indicate that very little was communicated to them on how to join a sports club. Many teachers and coaches made no mention of how to join clubs. This

was especially apparent at taster days during Phase 2. Little time was dedicated to expressing why students were attending the event or how to join a new club. In fact, direct observations indicated there were at least 2 students in each taster session who asked what the programme was for. The taster day consisted of staff bringing all participants together to hand out an informational pamphlet and discuss the day's events. Of the 8 sessions observed, 2 provided information on how students could join a local sports club.

Was oganisation effective?

Organisational responsibilities for the NECaSP programme were divided and allocated amongst programme's administrators, schools and sports clubs. Administrators were responsible for recruiting sports clubs and coaches into the programme, supplying sports equipment, and supplying the venue for Phase 2.

Schools were responsible for scheduling students throughout the programme. Guidelines for timing of the delivery of each phase were provided by the administrators. Phase 1 was to be delivered within the first term of the school year. Schools were able to choose from a selection of pre-set dates for Phase 2 sessions. Phase 3 was to be delivered before schools closed for summer term. Two participating schools were unable to deliver Phase 1 during the first term of the school year, and instead delivered this phase after half-term. These 2 schools did not complete subsequent phases of the programme. All other participating schools were able to deliver Phase 1 in the designated timeframe. Four schools (of n=13) re-scheduled sessions for Phase 2 due to scheduling conflicts. This re-scheduling pushed the timing of delivery for Phase 3 to later in the school year. Therefore 2 schools were unable to deliver the 6-week curriculum for Phase 3 before the end of the school year. A further 3 schools were unable to meet the deadline for Phase 3. Schools attributed this to a lack of time and staff in the final term of the school year. All 13 schools that participated in

Phase 2 were able to meet the responsibility of providing transportation for students from school to the sports facilities.

Evaluation of Intervention

Expectations & Awareness

The baseline student questionnaire included questions on what students hoped to gain from participation in the NECaSP programme. They were able to select from the following choices: Be more physically active, Learn about health and sport, Learn to play a sport, Be more sporty, Be more healthy, and Spend time with friends. In the follow-up questionnaire student selected from the same list to indicate if they achieved any of these. McNemar Chi-square tests were used to determine significant differences between baseline and follow-up responses. Significant differences for the “be more sporty” and “be more healthy” choices were seen, with baseline percentages lower than follow-up. The percentage of students choosing 'being more physically active', 'learning about health and sport', and 'spending time with friends' was higher at follow-up compared to baseline, not significant.

Parents (n=192) from 5 participating schools (of which 3 completed all phases of the programme) completed a questionnaire on family well-being and parental attitudes towards the NECaSP programme. Mean age of the sample was 40.38±6.50 and the majority of the sample (64.9%) was female. The majority of parents were categorised as being in the most deprived IMD quintile (93.3%). 76.3% were a 2-parent household and 19% were a 1-parent household. 73.2% of parents in this sample reported not being made aware of the NECaSP programme. Nearly 35% (n=68) of parents answered the question regarding if NECaSP had changed their child’s participation in sport/PA in the last 7 days. 76.5% of these parents responded that they did not think NECaSP had changed their child’s activity. 55.3% reported that time was a barrier and 19.1% said money was a barrier. When asked if the NECaSP

programme had changed their child's participation in sport or PA in the last month, 65.6% answered no. Time (56.8%) and money (21.6%) were the most common barriers reported.

Heads of PE from 14 schools completed questionnaires on their thoughts on the NECaSP programme. Two main questions were included to examine their views on the effectiveness of the programme: 1) did the NECaSP live up to your expectations? and 2) Please rate your overall NECaSP experience. Heads of PE were able to rate these on a scale of 1(disappointing)-5 (exceptional). Overall, heads of PE reacted positively to the NECaSP programme. 28.6% (n=4) rated meeting their expectations as a 5 (exceptional) and 71.4% (n=10) of respondents rated meeting their expectations of the programme as a 4. For overall experience, 57.1% (n=8) respondents rated the experience as a 5 and 42.9% (n= 6) rated it as a 4.

Heads of PE were also asked about the quality of service from the administrators and sports clubs, and the quality of sports equipment and information on sports clubs that was provided. Quality of service was rated highly, with 42.9% (n=6) of respondents rating the programme as exceptional (5), 42.9% (n=6) rating it just below exceptional (4), 7.1% (n=1) rating it as a 3 and 7.1% (n=1) rating it as a 2.

Quality of service from local sports clubs was also rated relatively highly. 50% (n=7) of Heads of PE rated the service quality from local sports clubs as exceptional (5), 28.6% (n=4) gave a rating of 4, and 21.4% (n=3) gave a rating of 3. Heads of PE who were less satisfied with the quality of service from sports clubs cited a need for coaches to improve teaching techniques and to begin sessions on time. 78.6% (n=11) of respondents rated the quality of sports equipment provided as a 4 or 5. 71.4% (n=10) rated the quality of information provided on sports clubs as a 4 or 5. Respondents who were unsatisfied with the quality of information provided on sports clubs recommended that NECaSP or clubs provide

flyers at each session outlining how students could join clubs and have staff and coaches provide more information during taster sessions.

Recommendations for Improvements

Students, parents and heads of PE were invited to give feedback on improvements they would recommend for the NECaSP progamme via questionnaire. Students were asked what more could be done to help them begin or maintain participation in a sports club/PA. Parents were asked what they thought would help to make NECaSP a successful programme. Heads of PE were asked how they would improve the NECaSP programme.

At follow-up, 45.6% of students responded to the question regarding what more could be done to help them begin or maintain participation in a sports club/PA. Analysis indicates 5 themes most commonly cited as helpful to students' beginning or maintaining this participation. Continued encouragement to try out or continue to engage in sports/PA was reported by 23.6% of students. 21.7% of students reported that they would begin or maintain a sport if sports and activities were organised for them on a regular basis. Students (11.8%) requested that schools continue to introduce them to new sports. They (8.1%) also reported that they were more likely to begin or maintain a sport if a variety of sports was regularly offered during PE classes in school. Interestingly, 5.1% of students responded that if teachers were more compassionate toward less active students they would be more likely to engage in sports/PA.

22.7% of parents completed the question on making the NECaSP a successful programme. 29.5% of respondents indicated that having access to more sports clubs through schools would make the programme successful. Offering sports and activities at convenient times and locations was regarded as important to the success of the programme by 20.5% of parents. Some parents indicated that weekends were the most convenient times and that

parents would also engage in the activities at this time. Finally, free or reduced rates for sports and activities were also considered important to parents (15.9%).

Heads of PE made several suggestions for the improvement of the NECaSP programme. One key suggestion, as mentioned previously, was to have flyers from sports clubs available at each session giving information to students on how to join clubs. One head of PE states:

> "Clubs bringing flyers to hand out to the students as I feel that was a missed opportunity as the uptake from the sessions could be high."

The need for improvement in the sports coaches' teaching techniques was cited by many heads of PE. For example, one commented:

> "For example they could learn how to increase the pace of their sessions, engage with more learners, challenge the more able and help the less able, therefore achieving more learning and increasing the enjoyment for more students."

The length of sessions was of concern as well. Some suggested offering fewer sports, but more time in each session. Finally, heads of PE were particularly concerned with the costs of continuing the programme in their schools. One head of PE comments:

"Excellent opportunity for the students but due to costing we cannot afford to run any of the clubs in school."

DISCUSSION

This study reports the findings of a summative process evaluation of the NECaSP programme and highlights achievements and areas for improvement. Findings indicate that while the intervention was generally well received by participants, parents and teachers, there were some barriers to the success of the programme. Using records kept by schools and

programme administrators, direct observations, email communication, and questionnaires we were able to identify problematic issues of the intervention which can be used to improve the design and implementation of future PA interventions with young people.

Barriers

Although fidelity was not specifically measured via validated fidelity indices, the elements measured in this evaluation provide an indication as to how closely the intervention adhered to the original planned implementation[13]. Issues with fidelity were apparent in quantity of session delivered, phases completed by schools and number of students who were able to complete the 6-week curriculum. Analysis of quantity of components suggests that the intervention was delivered in its entirety to 37.5% of participating schools. When outcome data are examined within this context, it can be inferred that motivation to engage with the intervention elements was not the main barrier to students becoming physically active, but rather lack of opportunity to engage with the intervention meant that many students were unlikely to gain the full benefits of the intervention.

Other areas of concern were identified in relation to participation in the NECaSP programme. Barriers to completion of the intervention were cited as primarily time and financial constraints pertaining to schools and teaching staff, rather than student lack of motivation to participate. Non-participant schools and schools who did not complete all phases of the programme identified lack of space in an already heavy scheduled syllabi and costs for transportation and staff time as barriers to participation. Although this intervention was piloted[12] and participant schools agreed to implementation plans at the outset, it is clear that many schools required flexibility to implement some elements of the intervention within their constraints and this flexibility needs to be considered in future intervention strategies. Additionally, funding of such interventions should be examined for any ways to accommodate schools with transportation to programme events. If this is not possible, the use

of more local community venues is recommended to reduce the amount of travel and financial burden on schools.

Overall, the quality of the NECaSP programme was very good. Main findings indicate that students were able to participate in all activities during the programme provided that their school agreed to participate. One key problem identified was the manner in which students were chosen participate in the 6-week after-school curriculum. Some teachers reported that they chose students to participate based in their current activity levels due to restrictions in the numbers of students they could accommodate. This is an important finding of this evaluation and indicates that not all students were given equal access to the full intervention and could indicate that students who were not already active were further marinalised by this method of exclusion. Increased time and space to accommodate all students should be considered in such interventions to ensure equality across all participants.

Communication between stakeholders, sports clubs, schools and participants was an area requiring improvement. Since key outcomes of the NECaSP are to connect students with local sports clubs and to increase PA levels, more information and encouragement should be provided at all phases in order to facilitate and easier transition from school-based activities to community-based activities. Previously mentioned outcome data on low participation by students at follow-up can be explained by this dearth of information[12]. Additionally, improved communication with parents on the aims, goals and delivery of this and future interventions is recommended. Previous research has found that parental knowledge and participation in similar interventions has improved PA/sport participation of children[16].

Facilitators

It has been documented that recruitment of a representative number of participants in school-based interventions can be a problem[16]. With taster sessions, such as in the NECaSP, a school-based intervention can address the issue of recruitment and maintain high

participation rates throughout the intervention. In addition, participant and staff expectations and awareness of an intervention can be good indicators of positive outcomes[17]. This is evident in outcome data that showed students perceived themselves to be sportier and healthier following participation in the intervention[12]. Heads of PE, ultimately responsible for the delivery of the school based intervention, also believed that the NECaSP met their expectations and was an overall good experience for all.

Students suggested further encouragement and understanding from coaches and teachers as a means to help facilitate their sport/PA participation[18], especially those with low PA/sport participation levels. Offering a variety of sports during PE in school, at regular intervals was also seen as a main factor influencing sport/PA engagement in students[16]. In fact, the PE and Sport Survey recently reported that only 6% of primary and secondary schools in England completed 3 hours of PE and sport within school time[19]. It is recommended that future school based interventions that bridge sports clubs and formal curriculum provision, should consider a more broad approach to the delivery of the programme throughout the academic year, school week and school day. Heads of PE also expressed the need for improved coaching techniques to facilitate the success of the intervention. It has previously been shown that effective coaching techniques can reduce psychological issues during sport/PA such as self-doubt, lack of motivation, and limited coping skills[20, 21]. Professional development programmes for coaches from local sports clubs should provide more effective learning spaces based on the diverse needs of every student.

Strengths

One main strength of this study is the mixed-methods nature of the process evaluation. The use of qualitative and quantitative methods allowed for a thorough examination of the intervention. Quantitative data regarding the study participants and participation throughout the intervention highlights the need to modify some aspects of the

445 delivery and protocols for the intervention. Moreover, qualitative data provides a richer
446 description of the attitudes and opinions of teachers and parents. Feedback from student
447 participants in their perceived gain from the intervention are crucial to contextualising the
448 barriers and facilitators to engagement in this and future interventions. Additional strengths
449 are the use of various methods of data collection for the triangulation of data and the use of
450 local resources (teachers) for translation of evaluation materials for participants with limited
451 English language abilities.

452 *Limitations*

453 One limitation of this study was reliance on data directly from the intervention
454 administrators and schools. Often missing data was a barrier to data collection processes.
455 Difficulties were seen in attaining follow-up data from students due to the low rate of
456 participants completing the programme. This brings into question whether there are any
457 contextual differences in participants who did not provide feedback. Moreover, obtaining
458 data from parents was a challenge due to their lack of knowledge of the intervention and
459 subsequent disinterest in completing questionnaires. As previously stated, fidelity was not
460 specifically measured via validated fidelity indices, but quantity, quality and overall
461 evaluation were used as indicators of intervention fidelity[13]. This can be seen as a limitation
462 as there is a limited picture as to the extent to which the intervention was received as planned.
463 In the future, such interventions should ensure that fidelity measures are in place.

464 **CONCLUSIONS**

465 One of the major goals of the NECaSP was to increase participation in sports/PA
466 amongst Year 7 students. While the achievement of this goal is important, it is critical that the
467 components of the intervention are practical and easily implemented. As a school-based
468 intervention that employed community-based strategies, the challenges identified in this
469 study are not unique to the NECaSP programme and have been identified in other PA

interventions[22, 23]. The programme, however, managed to recruit successfully and retain participants throughout its duration. This summative process evaluation has identified that further administrative, educational and financial support will help facilitate the success of the programme and its goals for adolescents in East London, and of other similar school-based intervention programmes globally. This evaluation highlighted the need to engage parents with the intervention at early stages to increase likelihood of success in terms of increasing PA/sport participation in young people. Furthermore it has provided a clear framework for future school based interventions targeting hard to reach populations and those experiencing axes of disadvantage such as social class, ethnicity, race, environment[12]. Finally, this evaluation has highlighted that changes in the school curriculum can be successful once all parties are involved (community, school, families)[24].

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Tables

Table 1: Summary of process evaluation components

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Evaluation Component	Data Collection Instruments	Source	Frequency of Measurement
Quantity			
Number of participating schools	Intervention records	activeNewham staff	Pre & post intervention
Number of participating pupils	Attendance records	Schools	Post intervention
Number of sessions delivered			
Phase 1	Intervention records	activeNewham staff	Post intervention
Phase 2	Intervention records	activeNewham staff	Post intervention
Phase 3	Intervention records	activeNewham staff	Post intervention
Number of sports offered	Intervention records	activeNewham staff	Post intervention
Number of coaches	Intervention records	activeNewham staff	Post intervention
Quality			
Were target participants able to participate?	Attendance records, direct observation, content analyses of email communication	Schools, research team, activeNewham staff	Post intervention
Was communication effective?	Direct observation, content analyses of email communication	Research team, teachers, coaches, activeNewham staff	Quarterly
Was organisation effective?	Direct observation,	Research team, teachers, coaches,	Quarterly

	content analyses of email communication	activeNewham staff	
Evaluation of Intervention			
Expectations & Awareness	Questionnaires	Pupils, parents, teachers	Pre & post intervention (pupils), during intervention(parents), post intervention (teachers)
Improvements	Questionnaires	Pupils, parents, teachers	Pre & post intervention (pupils), during intervention(parents), post intervention (teachers)

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559 **Table 2: Descriptive data on 3 schools who completed 3 phases**

	Full Baseline Sample(n=557)		**Sub-sample at Follow-up (n=356)**	
	Mean (SD)	%(n)	Mean (SD)	%(n)
Age	11.44(.50)		11.44(.53)	
Sex				
Male		52.80(294)		56.20(200)
Female		43.30(263)		47.20(155)
School				

A		32.73(182)		42.40(151)
B		46.52(259)		29.80(106)
C		20.75(113)		27.20(97)
IMD Quintile*				
1(Least deprived)		.20(1)		.30(1)
2		.40(2)		.60(2)
3		.50(3)		.80(3)
4		14.50(81)		12.70(45)
5(Most deprived)		83.70(466)		85.10(303)
Ethnicity				
White English		8.40(47)		8.10(29)
White British		.90(5)		.60(2)
White Irish		.40(2)		.60(2)
White-Other		12.20(68)		10.40(37)
Asian Indian		7.70(43)		7.90(28)
Asian Pakistani		9.70(54)		11.80(42)
Asian Bangladeshi		22.80(127)		26.10(93)
Asian Chinese		.70(4)		.30(1)
Asian- Other		4.30(24)		4.20(15)
Mixed- Black/Asian/White		3.60(20)		3.40(12)
Mixed- Other		2.20(12)		1.70(6)
Black African		15.60(87)		13.20(47)
Black Caribbean		4.10(23)		4.45(16)
Black- Other		3.90(22)		3.10(11)
Arab		1.80(10)		2.50(9)
Other		1.60(9)		1.70(6)

*Index of Multiple Deprivation[25].

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